Map MODERNIZATION

Federal Emergency Management Agency

FEMA's Flood Hazard Mapping Program

Guidelines and Specifications *for* Flood Hazard Mapping Partners

Appendix I: Scoping Guidance and Tools

FEDERAL EMERGENCY MANAGEMENT AGENCY

www.fema.gov/mit/tsd/DL_cgs.htm

DRAFT

October 2001

Appendix I

Project Scoping Toolbox

This Appendix provides a variety of tools to assist the Federal Emergency Management Agency (FEMA) Lead and other Project Team members during the Project Scoping phase of a Flood Map Project. Project Team members shall use the "toolbox" of templates, checklists, and forms presented in this Appendix to record activities throughout the Project Scoping phase.

Detailed information on the Project Scoping phase is provided in Volume 1, Section 1.3 of these Guidelines. As discussed in Volume 1, Section 1.3 of these Guidelines, the activities completed during the Project Scoping phase are grouped into those that take place before, during, and after a Scoping Meeting, as follows:

- Pre-Scoping Meeting activities;
- Scoping Meeting activities; and
- Post-Scoping Meeting activities.

I.1 Pre-Scoping Meeting Activities

The templates, checklists, and forms that the FEMA Lead and other Project Team members shall use to record activities before the Project Scoping Meeting are summarized in Subsections I.1.1 through I.1.8.

I.1.1 Initial Community Contact – Record of Communication Template

FEMA designed the Initial Community Contact—Record of Communication Template to record the activities involved with planning the initial community contact and recording the topics covered during telephone call(s) with the community. If more than one community is contacted, the FEMA Lead or other assigned FEMA staff shall prepare a separate form for each community.

Community/Mapping Project:	
Date:	**Case No.:**
Recorder:	
Name of Community Contact:	
Agency/Organization	
Telephone Number:	
E-Mail Address:	
Facsimile Number:	
Topics To Cover:	
• Purpose of the Mapping Project {Insert notes.}	
• Community's Perception of Mapping Needs {Insert notes.}	
• Target Schedule for Completing the Project {Insert notes.}	
• Possibility of Community Contributing as a Cooperative Technical Partner {Insert notes.}	
• Other Discussion Topics {Insert notes.}	
• Community's Engineering, Planning, and GIS Capabilities - How advanced are they? - Where do they reside in the community's organization? {Insert notes.}	

I.1.2 Project Management Plan Template

FEMA designed the Project Management Plan Template to record activities associated with the preliminary Project Management Plan, such as establishing specific project protocols and management objectives for the entire Project. After the Project Management Team has been formed, each team member will be provided with a copy of the preliminary Project Management Plan. The Project Management Plan is a "living" document that the Project Management Team shall update, with information added when necessary, as a Flood Map Project progresses.

Project Management Plan

{Insert Name of Project}

Prepared by:

{Insert Name(s) of Author(s)}

{Insert Initial Date}

{Insert Revision Date}

{Insert Revision Date}

{Insert Revision Date}

Project Management Team Contact Information

Project Management Team Member	Organization	Contact Information	
{Insert name of FEMA Lead.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name FEMA HQ Engineer.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name of MCC Representative.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			

Project Team Contact Information

Project Team Member	Organization	Contact Information	
{Insert name and address.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name and address.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name and address.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name and address.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name and address.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name and address.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			
{Insert name and address.}	{Insert organization or agency.}	Phone:	
		Fax:	
		E-mail:	
{Insert team member's role in this project.}			

Introduction

The general objectives for this Mapping Project are to:

Use this table to list or describe the overall objectives of the project (check all that apply).	
	Convert map panels (revised and unrevised) to digital format.
	Update the {floodplain and/or floodway} for the subject flooding source to reflect new {hydrologic and/or hydraulic} conditions (e.g., recent development, new flood control structures, changes in stream morphology, etc.).
	Incorporate previously unmapped or revised map features, such as [{specify; e.g., new roads, elevation reference marks, corporate boundaries, LOMCs, etc.}]
	Create new FIRMS for previously unmapped areas.
	Perform a detailed study of a previously approximately studied or unstudied area.
	Other primary objectives. {Add any other primary objectives.}

The remainder of this Project Management Plan establishes project coordination protocols and outlines the general management activities required to meet these objectives.

1. Description of Mapping Project

{Provide a brief description of the project area.}

2. Communication Protocols

{List and/or describe communication protocols between and among Project Management Team and Project Team Members; e.g., MICS, e-mail, project-specific Web site. Note: Insist on consistent and clear documentation methods for all project communications.}

3. Milestones and Reporting Requirements

The major milestones and intermediate milestones are identified in the table below. Fill in the major milestones first; this will help provide a schedule and framework. As the project progresses, fill in the intermediate milestones. (Major milestones are shaded gray.)

Milestones		Target Date	Completion Date
Pre-Scoping Meeting Activities	Form Project Management Team		
	Initial Community Contact		
	Prepare Preliminary Project Management Plan		
	Initial Project Conference Call with Community		
	Form Project Team		
	Complete Research		
	Draft Scope of Project		
	Draft Scope of Project Conference Call		
	Distribute Background Information		
Scoping Meeting	**Hold Scoping Meeting**		
Post-Scoping Meeting Activities	Document Scoping Meeting		
	Develop SOW and Distribute to Project Team Members		
	Project Team Members Submit T&C Estimates		
	Update MNUSS		
	Issue Task Orders and Notice to Proceed		

Milestones		Target Date	Completion Date
Flood Data Update	**Acquire Necessary Topographic and Field Data**		
	Independent QA/QC		
	Complete Hydrologic Analyses		
	Independent QA/QC		
	Complete Hydraulic Analyses		
	Independent QA/QC		
	Complete Digital Floodplain Mapping		
	Independent QA/QC		
Digital Conversion	Acquire Base Map		
	DFIRM Production (non-revised areas)		
	Merge Effective and Updated Information		
	Issue Preliminary FIS and FIRM		
Post-Preliminary Processing	Hold Final Meeting		
	Initiate 90-Day Appeal Period		
	Issue Letter of Final Determination		
	Final DFIRM Distributed		

4. Outreach Strategy

{Describe outreach strategy to be implemented for the project; e.g., press releases, targeted mailings, Congressional briefings, public affairs, Television/Radio, or "Letters to the Editor" from FEMA Director. Note that guidance on performing this outreach is currently under development by the FEMA Technical Services Division, Program Outreach Branch.}

5. Other On-Going and Related Activities or Projects

{List all on-going and related activities or projects. Describe how activity or project relates and/or ties in with the project.}

6. Quality Assurance Approach and/or Requirements

{Describe quality assurance approach and/or requirements for this project; e.g., FMPCC performs independent review of H&H analyses by CTP. Include a description of the roles and responsibilities of the various Project Team members in quality assurance.}

7. Retention and Maintenance of Records

{Describe procedures to be followed for retention and maintenance of all records and data related to this project.}

8. Project Completion Activities

Project Completion Activity	Completion Date
{Insert all Project Completion Activities; e.g., Updating MNUSS, Finalizing Vouchers, Holding Final Meeting. Note: Insert new table row for each activity.}	{Insert Date.}

I.1.3 Initial Project Conference Call Agenda/Meeting Minutes Template

FEMA designed the Initial Project Conference Call Agenda/Meeting Minutes Template to document the agenda and results of the initial Project conference call to the community (ies). If more than one call is conducted, the FEMA Lead or other assigned FEMA staff shall use a separate form for each community.

Community/Mapping Project:	
Date:	**Case No.:**
FEMA Lead:	
Participants: **1.** **6.** **2.** **7.** **3.** **8.** **4.** **9.** **5.** **10.**	

Agenda Items	**Estimated Time**
1. Introduce Project Management Team	
{Insert notes.}	
2. Provide overview of proposed project, including: • Purpose of project; • Potential flooding sources that have been identified so far (including limits of project); and • Why community/flooding sources were chosen for project.	
{Insert notes.}	
3. Discuss community's assessment of flood mapping needs	
{Insert notes.}	
4. Discuss potential data sources (e.g., digital base maps, on-going projects, and data collection efforts)	
{Insert notes.}	
5. Identify other key players (e.g., regional or State agencies)	
{Insert notes.}	
6. Discuss community's capabilities and interest in becoming a CTP	
{Insert notes.}	
7. Other topics of discussion	
{Insert notes.}	
8. Outline schedule of future activities	
{Insert notes.}	
9. Summary/Action Items	
{Insert notes.}	

I.1.4 Effective Flood Insurance Study and Flood Insurance Rate Map Summary Template

FEMA designed the Effective Flood Insurance Study and Flood Insurance Rate Map Summary Template for the assigned Project Team member to use in recording the results of research of effective information. As discussed in Volume 1, Subsection 1.3.2.6 of these Guidelines, findings from a search of the FEMA library storage facility for effective Flood Insurance Rate Map (FIRM) panels and Flood Insurance Study (FIS) reports and other flood hazard data or existing study data and the results of other research are to be documented on this template.

Effective FIRM Summary

{Insert Name of Project}

{Insert Community Name - Complete Separate Summary for Each Community.}

{Insert Date}

Prepared by:

{Insert Name(s) of Author(s)}

Introduction

{Insert paragraph describing the purpose of this Effective FIRM Summary document. If more than one community is involved in the project, provide a summary for each.}

1. Library Research

A. General Effective FIS Information

Date of the Effective FIRM: {Insert date}

Number of effective FIRM panels: {Insert number of panels and list by number; e.g., 99009C0025D}

Format of the effective FIRM (check all that apply):

- ❑ Manual
- ❑ Digital
- ❑ Countywide
- ❑ Map Initiatives

Type of flooding (check all that apply): ❑ Riverine ❑ Coastal ❑ Alluvial

(Attach effective FIRM, FIS, and/or FHBM.)

B. Base Map Information

Provide the following for the base map(s) used for the effective FIRM.

Base Map Source	Date	Scale
{Insert base map source}	{Insert date}	{Insert scale}

C. Summary of Map Actions

Letters of Map Change				
The LOMRs and LOMAs listed below have been issued and are currently effective.				
LOMC Type	Case No.	Effective Date	Project Identifier	Panel

D. Summary of Flood Control Structures

{Provide an inventory of effective flood control structures (levees/dams) and their certification status.}

{Provide any relevant information on file regarding post-disaster investigations in the proposed study area.}

E. Flooding Source: {Insert name of flooding source; use one "Flooding Source" table for each flooding source studied in detail.}

H&H	Method	Date	Digital Copy Available?	Reach Limits
Hydrology			❑ Yes ❑ No	
Hydraulics			❑ Yes ❑ No	

Topographic Source for Floodplain Delineation	{Insert Topographic Source.}
Data Source for Cross Section Data	{Insert Data Source.}

2. MNUSS Research Summary

A. Flood Data Update Needs

List Need Type(s): {Insert type of need.}

B. Map Maintenance Needs

List Need Type(s): {Insert type of need.}

(Attach a printout of the MNUSS Community Need Reports.)

3. Map Needs Assessment Results

Was a separate Map Needs Assessment done? ❑ Yes ❑ No

If so, when? {Insert date of Map Needs Assessment.}

Why? {Insert description of why the needs assessment was done.}

Summary of Map Needs Assessment Findings:

{Provide a summary of the findings of the map needs assessment.}

(Attach completed Map Needs Assessment Form.)

4. Attachments

- Scoping Map
- Relevant future file information
- MNUSS Community Need Reports:
- Map Needs Assessment Form, if completed
- Effective FIRM panels
- FIS report

I.1.5 Available Data Inventory Template

FEMA designed the Available Data Inventory Template to record the results of research of all available data including, but not limited to, available base map information, topographic data, flood hazard data and hydrologic and hydraulic information and data. The assigned Project Team member shall use this template to document the agencies contacted, date, name of person contacted, telephone number, and the result of the research.

Available Data Inventory

{Insert Name of Project}

{Insert Date}

Prepared by:

{Insert Name(s) of Author(s)}

This checklist is used to inventory base map, topographic, and hydrologic and hydraulic data, and floodplain mapping information and data available or currently underway that may be useful for this project. (Also, use the "Effective FIRM Summary" and the "Potential Obstacles to Project Completion Checklist.")

Use the checklist below to help solicit the information you will need to answer the key questions.

Base Map Information

Are U.S. Geological Survey (USGS) Digital Orthophoto Quadrangles (DOQs) available for this community or county? ❑ Yes ❑ No

{Insert notes.}

What community base map data are available? From whom?

{Insert notes.}

What is the source of the base map data and how were the data created?

{Insert notes.}

Are the owners of the data willing to allow FEMA to release the base map data to the public with the DFIRMs? ❑ Yes ❑ No

If you checked "No," to the above question you do not need to complete the rest of the Base Map Information section of this checklist.

Contact Information for Data Source	
Name:	
Organization:	
Telephone No.:	
E-Mail Address:	
Facsimile No.:	

{Insert notes.}

If the base map data are in vector format and the owner is not willing to release the data, will the owner allow FEMA to make a raster image of the vector base map data and release that? ❑ Yes ❑ No

{Insert notes.}

Base Map Information (Continued)

Do the data cover the entire community or county being restudied (not just the streams being studied)? ❑ Yes ❑ No

{Insert notes.}

Are the data available now? If not, what is the projected completion date? ❑ Yes ❑ No

{Insert notes.}

What is the accuracy or resolution of each data set or type?

{Insert notes.}

When were the base map data created, last updated, or reviewed for update needs?

Created	Last Updated	Reviewed
{Insert date.}	{Insert date.}	{Insert date.}

{Insert notes.}

Is the base map in the process of being revised? If yes, what is being done and when will it be completed? ❑ Yes ❑ No

{Insert notes.}

What projection, horizontal datum, and vertical datum were used for the base map data sets?

Projection	Horizontal Datum	Vertical Datum
{Insert notes.}	{Insert notes.}	{Insert notes.}

In what file format(s) are the data available?

{Insert notes.}

How are the data tiled?

{Insert notes.}

Is a data dictionary or metadata available? ❑ Yes ❑ No

{Insert notes.}

Base Map Information (Continued)

What feature types do the base map data sets contain? (Check all that apply.)

- ❑ Roads
  - ❑ Centerlines
  - ❑ Edge of pavement
  - ❑ Right of way
  - ❑ Digital orthophotos

  {Insert notes.}
- ❑ Road Names
  - ❑ Stored as attributes in database
  - ❑ Placed as graphic elements for plotting. At what scale(s)?

  {Insert notes.}
- ❑ Railroads/railroad names

  {Insert notes.}
- ❑ Airports

  {Insert notes.}
- ❑ Rivers, streams, lakes, shorelines, coastline

  {Insert notes.}
- ❑ Are political boundaries (corporate, county, extraterritorial, etc.) current? ❑ Yes ❑ No

  {Insert notes.}
- ❑ Parks, military reservations, Native American lands

  {Insert notes.}
- ❑ Range, township, section lines

  {Insert notes.}
- ❑ Building footprints

  {Insert notes.}
- ❑ Parcels

  {Insert notes.}

Base Map Information (Continued)

❑ Bridges

{Insert notes.}

❑ Flood control structures (e.g., culverts, levees, dams, weirs, floodwalls, jetties, etc.)

{Insert notes.}

❑ What bench marks, Elevation Reference Marks (ERMs), or other vertical control data are available for the community, county, or study area?

{Insert notes.}

Topographic Information

What elevation data are available?

{Insert notes.}

What is the source of the topographic data (how were the data created)?

{Insert notes.}

Do the data cover the floodplains for the flooding sources in the entire community or county being restudied? ❑ Yes ❑ No

{Insert notes.}

Are the data available now? If not, what is the projected completion date? ❑ Yes ❑ No

{Insert notes.}

What is the accuracy or resolution of the topographic data?

{Insert notes.}

When were the topographic data created, last updated, or reviewed for update needs?

Created	Last Updated	Reviewed
{Insert date.}	{Insert date.}	{Insert date.}

{Insert notes.}

Topographic Information (Continued)

What projection, horizontal datum, and vertical datum were used for the topographic data?

Projection	Horizontal Datum	Vertical Datum
{Insert notes.}	{Insert notes.}	{Insert notes.}

{Insert notes.}

In what format(s) are the data available?

{Insert notes.}

Contours	Digital Elevation Model (DEM)	Digital Terrain Model (DTM)	Triangulated Irregular Network (TIN)
{Insert contour interval.}	{Insert horizontal and vertical resolutions.}	{Insert notes.}	{Insert notes.}

{Insert notes.}

Flood Hazard Data

Are digital flood hazard data available? If so, from whom? ❑ Yes ❑ No

{Insert notes.}

Have flood hazard data that have been converted to digital format been compared to the effective FIRMs to ensure that base map to flood hazard relationships have been preserved? ❑ Yes ❑ No

{Insert notes.}

What was the source of the digital flood hazard data and how were the data created?

{Insert notes.}

Do any new data tie in to the existing effective information? ❑ Yes ❑ No

{Insert notes.}

Do the data cover the entire community or county being restudied? ❑ Yes ❑ No

{Insert notes.}

Flood Hazard Data (Continued)

Are the data available now? If not, what is the projected completion date? ❑ Yes ❑ No

{Insert notes.}

What is the accuracy or resolution of each data set or type?

{Insert notes.}

When were the data created, last updated, or reviewed for update needs?

{Insert notes.}

Created	Last Updated	Reviewed
{Insert date.}	{Insert date.}	{Insert date.}

{Insert notes.}

Are Letters of Map Change (LOMCs) included in any digital data sets? ❑ Yes ❑ No

{Insert notes.}

What projection, horizontal datum, and vertical datum were used for the flood hazard data sets?

{Insert notes.}

Projection	Horizontal Datum	Vertical Datum
{Insert notes.}	{Insert notes.}	{Insert notes.}

In what file format(s) are the data available?

{Insert notes.}

How are the data tiled?

{Insert notes.}

Is a data dictionary or metadata available? ❑ Yes ❑ No

{Insert notes.}

Have flood hazard data that have been converted to digital format been compared to the effective FIRMs to ensure that base map to flood hazard relationships have been preserved? ❑ Yes ❑ No

{Insert notes.}

Flood Hazard Data (Continued)

What feature types do the flood hazard data sets contain? (Check all that apply.)

- ❑ 1% annual chance flood hazard areas

  {Insert notes.}

- ❑ 0.2% annual chance flood hazard areas

  {Insert notes.}

- ❑ Floodways

  {Insert notes.}

- ❑ Coastal Barrier Resources System areas

  {Insert notes.}

- ❑ Alluvial fans

  {Insert notes.}

- ❑ Base flood elevations, velocities, or depths

  {Insert notes.}

- ❑ Cross sections

  {Insert notes.}

- ❑ Elevation Reference Marks (ERMs)

  {Insert notes.}

- ❑ LOMCs

  {Insert notes.}

- ❑ Are data for other flood frequencies available? ❑ Yes ❑ No

  {Insert notes.}

Do the flood hazard boundaries need to be fitted to newer or more detailed stream locations and/or topography than was previously used for the existing FIRM? ❑ Yes ❑ No

{Insert notes.}

Are new hydrologic and hydraulic models available? If so, please describe them. ❑ Yes ❑ No

{Insert notes.}

Do hydrologic and hydraulic models need inclusion? ❑ Yes ❑ No

{Insert notes.}

Flood Hazard Data (Continued)

Were the hydrologic and hydraulic data developed using automated modeling and mapping techniques? If so, describe them. ❑ Yes ❑ No

{Insert notes.}

Are digital files containing data needed for hydrologic or hydraulic modeling (e.g., land use or soils) available? ❑ Yes ❑ No

{Insert notes.}

Are supplemental data (e.g., photographs, etc.) available? ❑ Yes ❑ No

{Insert notes.}

Are supplemental data in digital format? ❑ Yes ❑ No

{Insert notes.}

Are there levees in this community? ❑ Yes ❑ No

{Insert notes.}

If levees are present, do they provide protection from the 1% annual chance flood event? ❑ Yes ❑ No

{Insert notes.}

Is U.S. Army Corps of Engineers certification available for these levees? ❑ Yes ❑ No

{Insert notes.}

Do the coastal analyses reflect primary frontal dunes? ❑ Yes ❑ No

{Insert notes.}

Do the coastal analyses reflect wave heights? ❑ Yes ❑ No

{Insert notes.}

Does the community maintain hydrologic and hydraulic analyses that reflect future conditions? ❑ Yes ❑ No

{Insert notes.}

Are other hazard data available? If yes, what are they? ❑ Yes ❑ No

{Insert notes.}

Are elevation certificates for floodprone structures available in a database or other electronic format? ❑ Yes ❑ No

{Insert notes.}

I.1.6 Potential Obstacles to Project Completion Checklist Template

FEMA designed the Potential Obstacles to Project Completion Checklist Template to record identified potential obstacles to the completion of a Flood Map Project, as well as to record creative solutions and/or alternatives to minimize or avoid potential obstacles. Check the type of obstacle you have identified, and then fill in the necessary information. The checklist is a "living" document that the assigned Project Team member shall update throughout the entire lifecycle of the Project, when necessary.

Community Name	{Insert Community Name.}
Project Management Team	{List Project Management Team Members.}
Date Created	{Insert checklist completion date.}
Date Revised	{Insert checklist revision date.}
Date Revised	{Insert checklist revision date.}
Date Revised	{Insert checklist revision date.}

❑

Unable to Adequately Address Needs with Available Funding
Minimum Project Needs • {Insert needs.}
Estimated Funding Required • {Provide estimated funding level required.}
Possible Solutions or Alternatives • {List and/or discuss possible solutions or alternatives.}
Comments: {Insert additional comments.}
Resolution • {Describe the resolution for this issue.}
Can the project proceed? ❑ Yes ❑ No

❑ **Base Map Availability**

❑ USGS DOQ not available

❑ Local base map not available

❑ Local base map does not meet FEMA's minimum specifications. Explain why:

(For additional information, visit FEMA' Web site at www.fema.gov/mit/tsd and view "Guidance Information for Base Map Specifications for New Digital Flood Insurance Rate Map Product." The following minimum standards must be met for FEMA to use community-supplied base map data rather than USGS DOQs for DFIRM production. Check those that apply to this project.)

- ❑ Resolution
- ❑ Horizontal Accuracy
- ❑ Horizontal Reference System
- ❑ Data Sources
- ❑ Currency
- ❑ Coverage
- ❑ Availability
- ❑ Restrictions on Use
- ❑ Contents
- ❑ Thematic Separation of Data
- ❑ File Format

❑ Data Structure ❑ Metadata
Comments: {Insert notes.}
Possible Solutions or Alternatives • {List and/or discuss possible solutions or alternatives for base map availability issues.}
Resolution • {Describe the resolution for this issue.}
Can the project proceed? ❑ Yes ❑ No

❑

Hydrologic or Hydraulic Issues
Hydrologic & Hydraulic Issues • {List and/or discuss any hydrologic & hydraulic issues that could threaten the success of the project.}
Possible Solutions or Alternatives • {List and/or discuss possible solutions or alternatives for each hydrologic & hydraulic issue.}
Comments: {Insert additional comments.}
Resolution • {Describe the resolution for this issue.}
Can the project proceed? ❑ Yes ❑ No

❑ **Community Concerns**

Community Needs, Concerns, and/or Preferences

- {List and/or describe any community needs, concerns, and/or preferences.}

Other Potential Community-Related Obstacles

- {Discuss and/or describe any other obstacles posed by the community.}

Possible Solutions or Alternatives

- {List and/or discuss possible solutions or alternatives to community-related issues.}

Comments: {Insert additional comments.}

Resolution

- {Describe the resolution for this issue.}

Can the project proceed? ❑ Yes ❑ No

❑ **Reliance on Other Studies or Data**

Relationship to the Proposed Flood Project

- {Describe how the dependent on-going study or studies tie in with the proposed flood mapping project.}
- {Describe if, how, and why the dependent on-going study or studies could delay the proposed flood mapping project.}
- {Describe data that will not be available within the project's scheduling constraints; e.g., topographic mapping.}

Possible Solutions • {List and/or discuss possible solutions or ways to work around this obstacle. For example, if the dependent on-going study or studies are a source of data for the proposed mapping project, are there alternative sources of data?}
Comments: {Insert additional comments.}
Resolution • {Describe the resolution for this issue.}
Can the project proceed? ❑ Yes ❑ No

❑

Project Priority
Change in Priority • {List any possible changes in the priority for this project.}
Needs Update • {Discuss any updates to the needs that may affect the priority.}
Possible Solutions or Alternatives • {Describe appropriate course of action should priorities change.}
Comments: {Insert additional comments.}
Resolution • {Describe the resolution for this issue.}
Can the project proceed? ❑ Yes ❑ No

❑	**Other Considerations**
	Federal/State/Non-Governmental Organizations • {Describe and/or discuss any politically motivated considerations that could delay/impede the project.}
	Programmatic • {Describe and/or discuss any programmatic considerations that could delay/impede the project.}
	Disaster-Related • {Describe and/or discuss any disaster-related issues or considerations that could delay/impede the project.}
	Legal • {Describe and/or discuss any legal considerations that could delay/impede the project.}
	Other • {Describe and/or discuss any additional considerations that could delay/impede the project.}
	Possible Solutions or Alternatives • {Describe any possible solutions or alternatives.}
	Comments: {Insert additional comments.}
	Resolution • {Describe the resolution for this issue.}
	Can the project proceed? ❑ Yes ❑ No

I.1.7 Draft Scope of Project Template

FEMA designed the Draft Scope of Project Template to record the elements of the draft Scope of Project. The draft Scope of Project is based upon mapping needs determined during the Mapping Needs Assessment an/or the research phase of the scooping. The draft Scope of Project is a "living" document that and the FEMA Lead and other Project Team members shall update, when necessary.

Scope of Project

{Insert Name of Project}

{Insert Date}

{Insert Revision Date}

{Insert Revision Date}

{Insert Revision Date}

{Insert Revision Date}

{Insert Name(s) of Author(s)}

Introduction

{Insert paragraph describing the purpose of this project. The purpose statement should include a summary of the research and outreach activities completed. Note in the purpose statement that the project is subject to change due to community priorities and funding availability.}

1. Needs List

Mapping Need	Need Type	Source of Need
{Insert brief summary of need; e.g., "Restudy of Mill Brook" or "Convert Maps to DFIRM." Add new table row for each need.}	{Insert either "Flood Data Update" or "Map Maintenance."}	{Explain how the need was identified; e.g., community, MAPPING PARTNER Research, etc.}

2. DFIRM Production

Check all that apply:

❑ Countywide ❑ Community-based

❑ Incorporate LOMCs

❑ Effective Information for Non-Revised Flooding Sources will be digitized

A. Proposed Paneling Scheme

{Describe and discuss the proposed paneling scheme for this project. Attach an index.}

B. Base Map

{Indicate the sources for base maps to be used for the project.}

Source	Date	Scale	Contour Interval	Coverage
{Insert source of base map. Note: Add table row for each source.}	{Insert date.}	{Insert scale.}	{Insert contour interval.}	{Describe coverage.}

{Additional comments}

C. Option Choices

❑ Resolve external mismatches

❑ Incorporate Physical Map Revision or Existing Data Studies

❑ Fit existing FIS profiles to newer topographic data

❑ Expand database to include:

- {List what will be included in expanded database.}

❑ Fit Zone As to newer topo

❑ Map unmapped communities

❑ Convert to North American Vertical Datum of 1988

❑ Convert to metric

❑ Add supplemental images:

{Examples: Scanned Documents, Engineering Study Data Package, Technical Support Data Notebook, etc.}

- ❑ Replace ERMs with National Geodetic Survey benchmarks
- ❑ Include future conditions mapping
- ❑ Include erosion mapping
- ❑ Include other hazards:

  {Specify other hazards.}
- ❑ Other community options:

  {Specify other community options.}

3. Description of Project Area (Add flooding source tables as needed)

Flooding Source: (Insert Name}

Hazard Identification Method		Data Collection	
Hydrology	Hydraulics	Field Surveys for Cross Sections and Structures	Topographic Data (Include Scale and Contour Interval)

Flooding Source: (Insert Name}

Hazard Identification Method		Data Collection	
Hydrology	Hydraulics	Field Surveys for Cross Sections and Structures	Topographic Data (Include Scale and Contour Interval)

I.1.8 Draft Scope of Project Conference Call/Agenda Meeting Minutes Template

FEMA designed the Draft Scope of Project Conference Call/Agenda Meeting Minutes Template to record the results of the conference call that the FEMA Lead will hold with the community once research has been completed and the draft Scope of Project has been prepared. If more than one call is conducted, the FEMA Lead or other assigned FEMA staff shall prepare a separate form for each community.

Community/Mapping Project:		
Date:	**Case No.:**	
FEMA Lead:		
Participants:		
1.	6.	
2.	7.	
3.	8.	
4.	9.	
5.	10.	
Agenda Items		**Estimated Time:**
1. Introductions/Roll-Call		
{Insert notes.}		
2. Overview of Agenda for Conference Call		
{Insert notes.}		
3. Summary of Research Methods		
{Review how the draft Scope of Project was developed.}		
4. Discuss Draft Scope of Project: • Flooding sources to be studied • Flood hazard identification methods to be used • Data collection needs and methods • Proposed paneling scheme • Base map • DFIRM options • Digital Conversion of Existing Data		
{Insert notes.}		

Agenda Items	Estimated Time:
5. Schedule Scoping Meeting and Identify Attendees	
{Insert notes.}	
6. Summary of Action Items	
{Insert notes.}	

I.2 Scoping Meeting Activities

The templates, checklists, and forms that the FEMA Lead and other Project Team members shall use to record activities during the Project Scoping Meeting are summarized in Subsections I.2.1 through I.2.8.

I.2.1 Scoping Meeting Item Checklist Template

FEMA designed the Scoping Meeting Item Checklist Template for the FEMA Lead to use in recording, before the Scoping Meeting is held, what items the individual Project team members must bring to the Scoping Meeting.

The following items are considered essential for the Scoping Meeting:

Item	Responsible Team Member
FIS Report(s)	
FIRM Panel(s)	
USGS Quad(s)	
Best Available Community Base Map(s)	
Effective FIRM Summary	
Available Data Inventory	
Scoping Map	
Draft Scope of Project	
Scoping Meeting Agenda/Minutes Form and Other Relevant Scoping Meeting Tools	

Bring the following items, if available:

Available	Item	Responsible Team Member
❑ Yes ❑ No	Aerial Photographs and/or DOQQ Images	
❑ Yes ❑ No	Aerial Topography	
❑ Yes ❑ No	Pertinent Reports/Studies/Plans (e.g., Federal Agency Reports or Master Drainage Plans)	
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		

The following community resources should also be available for the Scoping Meeting:

Available Resources	Item	Responsible Team Member
❑ Yes ❑ No	Community Master Plan(s)	
❑ Yes ❑ No	As-Built Plans	
❑ Yes ❑ No	Drainage Master Plans	
❑ Yes ❑ No	Street Maps	
❑ Yes ❑ No	Zoning Maps	
❑ Yes ❑ No	Floodplain Ordinance(s)	
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		
❑ Yes ❑ No		

I.2.2 Document Transmittal Letter Template

FEMA designed the Document Transmittal Letter Template for the FEMA Lead, FEMA Assistance Officer, or FEMA Contracting Officer to use in distributing the Scoping Meeting Item Checklist and background information on the Flood Map Project to all individuals that will be attending the Scoping Meeting.

Federal Emergency Management Agency
Region {Insert Regional Office Number}

{Date}

{Name of Community Official}
{Community Official's Title}
{Address 1}
{Address 2}
{Community, State ZIP code}

Dear {Name of Community Official}:

We have scheduled your community's Flood Mapping Project Scoping Meeting for {INSERT DATE OF SCOPING MEETING}. The meeting will be held at {INSERT TIME AND LOCATION OF MEETING}. Details regarding attendees, how you can prepare for the meeting, and what you will need to bring are listed below.

Flood Mapping Project:	{Insert the name of the Flood Mapping Project.}
Case Number:	{Insert Case Number.}
FEMA Lead:	{Name of FEMA Lead}
Attendees:	{Insert names of all attendees.}

The following are attachments to this letter:

- Scoping Meeting Agenda
- Revised Draft Scope of Project
- Project Management Plan

The Project Management Team will bring the following items:

- {Add items, as necessary.}

Your community has agreed to provide the following for the Flood Mapping Project Scoping Meeting:

- As-Built Construction Plans:
- Development Proposals
- Topographic Mapping
- Community Master Plan
- Street Maps
- Zoning Maps
- Floodplain Ordinances

We look forward to working with the community officials of {INSERT NAME OF COMMUNITY} to ensure that the goals of this Flood Mapping Project are met. This will allow {INSERT NAME OF COMMUNITY} to administer effective floodplain management programs. If you have any questions, please do not hesitate to contact the Director, Mitigation Division of the FEMA Region {Region Number} Office, at {Telephone}, or {Name of FEMA HQ Engineer} at our Headquarters Office in Washington, D.C., at {Telephone}, or by facsimile at {Fax Number}.

Sincerely,

{INSERT NAME AND TITLE OF FEMA LEAD AND/OR CONTRACTING OFFICER}

cc: {FEMA HQ Engineer}, FEMA Headquarters

{OTHER PROJECT TEAM MEMBERS, AS NECESSARY}

Attachments

I.2.3 Scoping Meeting Attendance Sheet Template

FEMA designed the Scoping Meeting Attendance Sheet Template for the FEMA Lead or other FEMA staff to use in recording the name, title, organization/affiliation, and contact information of the attendees of the Scoping Meeting.

Community/Mapping Project	
Date/Time:	**Case No.:**
FEMA Lead:	**Location of Meeting:**

Name	Title	Organization/ Affiliation	Telephone/Fax	E-Mail Address
			(P) (F)	
			(P) (F)	
			(P) (F)	
			(P) (F)	
			(P) (F)	
			(P) (F)	

I.2.4 Scoping Meeting Agenda/Meeting Minutes Template

FEMA designed the Scoping Meeting Agenda/Meeting Minutes Template for the FEMA Lead or other FEMA staff to use in documenting the agenda and results of the Scoping Meeting. The estimated times listed are simply a guideline to assist in running the meeting.

Community/Mapping Project:	
Date/Time:	**Case No.:**
FEMA Lead:	**Location of Meeting:**
Participants:	
1.	6.
2.	7.
3.	8.
4.	9.
5.	10.

Agenda Items	Estimated Time
Introduction/Sign-In Sheet	10 minutes
{Insert notes.}	
Overview of Scoping Meeting Agenda	5 minutes
{Insert notes.}	
National Flood Insurance Program Overview	10 minutes
{Insert notes.}	
Needs List Development	15 to 45 minutes
{Insert notes.}	
Scope of Project Refinement	30 to 45 minutes
{Insert notes.}	
Community and Partner Agreement Discussion	15 minutes
{Insert notes.}	
Summary of Action Items	5 minutes
{Insert notes.}	
Total Time:	**1¾ to 2½ hours**

I.2.5 Task Assignment and Scheduling Worksheet Template

FEMA designed the Task Assignment and Scheduling Worksheet Template to document task assignment made at the Scoping Meeting to Project team members and to develop a schedule for the Project. The assigned Project Team member that records this information shall refer to the Flood Mapping Project Process flowchart (see Subsection I.2.6) and mark any components that will not be included as not applicable under the column entitled "Responsible Entity."

Task Assignment and Scheduling Worksheet

Case No. _____

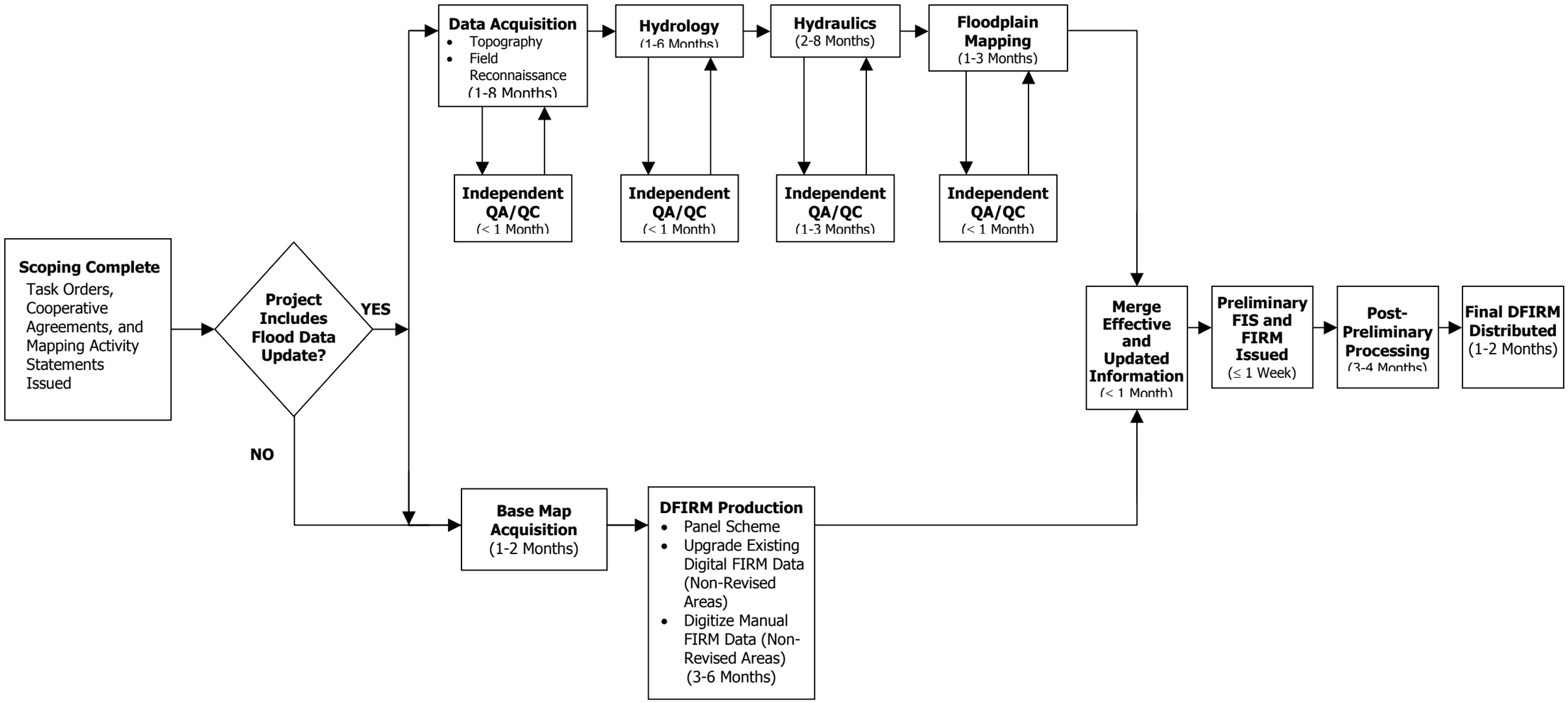
(See also the Flood Mapping Project Process flowchart.
Mark any components that will not be included as "N/A" under "Responsible Entity.")

Community/Mapping Project: {Insert Name of Community/Mapping Project.}			
Mapping Project Component	**Responsible Entity**	**Target Due Date**	**Typical Timeframe**
Field Surveys and Reconnaissance			1-8 months
Topographic Data Development			1-8 months
Independent QA/QC of Topographic Data Development			≤ 1 month
Hydrology			1-6 months
Independent QA/QC of Hydrology			≤ 1 month
Hydraulics			2-8 months
Independent QA/QC of Hydraulics			1-3 months
Floodplain Mapping (Revised Areas)			1-3 months
Independent QA/QC of Floodplain Mapping			≤ 1 month
Base Map Acquisition			1-2 months
DFIRM Production (Non-Revised Areas)			3-6 months
Merge Effective and Revised Information/Issue Preliminary FIRM			≤ 1 month
Issue Preliminary FIS and FIRM			≤ 1 week
Post-Preliminary Processing			3-4 months
Distribute Final DFIRM			1-2 months

I.2.6 The Flood Mapping Project Process Flowchart

FEMA designed the Flood Mapping Project Process flowchart as a tool that the FEMA Lead and all Project Team members shall use for developing the Project schedule at the Scoping Meeting. (Oversize)

Flood Mapping Project Process



Note: Many of these steps can be conducted concurrently. Initiation of most steps is not necessarily contingent on the completion of previous steps.

I.2.7 Community Partner Memorandum of Agreement Template

FEMA designed the Community Partner Memorandum of Agreement Template to assist the FEMA Lead and/or Assistance Officer in developing an agreement between FEMA and a community that will participate in the Flood Map Project by contributing work or base map data, but will not be participating in the Cooperating Technical Partners (CTP) initiative. If the community will not be participating in the Project by contributing work, the FEMA Lead and/or Assistance Officer will sign a Community Partner Agreement with the community to document the good faith efforts to collaboratively assess the community's needs, develop an appropriate Scope of Project, and develop and publicize the resulting map.

Federal Emergency Management Agency
Community Partner Memorandum of Agreement

AGREEMENT is made on {Insert Date}, by these parties: {Insert name(s) of community and/or partner(s)} and the Federal Emergency Management Agency (FEMA).

BECAUSE the National Flood Insurance Program (NFIP), established by the National Flood Insurance Act of 1968, has several purposes, the most significant being:

- To better indemnify individuals from losses through the availability of flood insurance;
- To reduce future flood damages through community floodplain management regulations; and
- To reduce costs for disaster assistance and flood control.

BECAUSE a critical component of this program is the identification and mapping of the nation's floodplains to create a broad-based awareness of the flood hazard and to provide the data necessary for community floodplain management programs and to actuarially rate flood insurance;

BECAUSE FEMA administers the NFIP and is authorized by §1360 of the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4101), to establish and update flood-risk zone data in floodplain areas. Further, in the identification of flood-prone areas, FEMA is authorized to consult with, receive information from, and enter into agreements or other arrangements with the head of any State, regional, or local agency in order to identify these floodplain areas;

BECAUSE FEMA encourages strong Federal, State, regional, and local partnerships for the purposes of reducing flood losses and disaster assistance; and FEMA and its State, regional, and local partners have determined that it is advantageous to encourage and formalize greater cooperation in the flood hazard identification and mapping processes;

BECAUSE {Insert name(s) of community and/or partner(s)} participates in the NFIP {indicate if the community or partner shares flood protection and/or floodplain management responsibilities with communities that participate in the NFIP}, and {Insert name(s) of community and/or partner(s) or representatives of NFIP participating community}, {Insert has or have} been deemed by FEMA to be in good standing in the NFIP; and

BECAUSE {Insert name(s) of community and/or partner(s)} {Insert has or have} expressed a desire to cooperate with FEMA in the flood hazard identification process and have worked with FEMA to identify and prioritize {Insert name(s) of community and/or partner(s). Note name is possessive here.} flood mapping needs and develop a scope of study to produce an updated, digital flood map.

NOW, THEREFORE, it is mutually agreed that the parties enter into this agreement to work together to produce an updated, digital flood map for {Insert name(s) of community and/or partner(s)}.

_____ _____

Community Authorized Representative date

_____ _____

FEMA Authorized Representative date

I.2.8 Cooperating Technical Partners Memorandum of Agreement

FEMA designed the Cooperating Technical Partners Memorandum of Agreement template to assist the FEMA Lead and/or Assistance Officer in developing a Memorandum of Agreement (MOA) with a community, regional agency, or State Agency that chooses to participate in the CTP initiative. The MOA is a broad statement of principle, emphasizing the value of the National Flood Insurance Program's three components of insurance, floodplain management, and mapping. Through the MOA, FEMA and the CTP acknowledge the fundamental importance of flood hazard identification in the successful reduction of future flood losses and commit to the effort.

Federal Emergency Management Agency
Cooperating Technical Partner
Memorandum of Agreement

AGREEMENT is made on {Insert Date}, by these parties: {Insert name(s) of community and/or partner(s)} and the Federal Emergency Management Agency (FEMA).

BECAUSE the National Flood Insurance Program (NFIP), established by the National Flood Insurance Act of 1968, has several purposes, the most significant being:

To better indemnify individuals from losses through the availability of flood insurance;

To reduce future flood damages through community floodplain management regulations; and

To reduce costs for disaster assistance and flood control.

BECAUSE a critical component of this program is the identification and mapping of the nation's floodplains to create a broad-based awareness of the flood hazard and to provide the data necessary for community floodplain management programs and to actuarially rate flood insurance;

BECAUSE FEMA administers the NFIP and is authorized by §1360 of the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4101), to establish and update flood-risk zone data in floodplain areas. Further, in the identification of flood-prone areas, FEMA is authorized to consult with, receive information from, and enter into agreements or other arrangements with the head of any State, regional, or local agency in order to identify these floodplain areas;

BECAUSE FEMA encourages strong Federal, State, regional, and local partnerships for the purposes of reducing flood losses and disaster assistance; and FEMA and its State, regional, and local partners have determined that it is advantageous to encourage and formalize greater cooperation in the flood hazard identification and mapping processes;

BECAUSE {Insert name(s) of community and/or partner(s)} participates in the NFIP {indicate if the community or partner shares flood protection and/or floodplain management responsibilities with communities that participate in the NFIP}, and {Insert name(s) of community and/or partner(s) or representatives of NFIP participating community}, {Insert has or have} been deemed by FEMA to be in good standing in the NFIP; and

BECAUSE {Insert name(s) of community and/or partner(s)} {Insert has or have} expressed a desire to cooperate with FEMA in the flood hazard identification process and have worked with FEMA to identify and prioritize {Insert name(s) of community and/or partner(s). Note name is possessive here.} flood mapping needs and develop a scope of study to produce an updated, digital flood map; and

BECAUSE {Insert name(s) of community and/or partner(s)} {Insert has or have} expressed a desire to perform certain functions in the flood hazard identification process and {Insert has or have} provided evidence that it {Insert has or have} sufficient technical capability and will dedicate the resources necessary to perform those functions.

NOW, THEREFORE, It is mutually agreed that the parties enter into this agreement to work together to produce an updated, digital flood map for {Insert name(s) of community and/or partner(s)}.

1. Consultations

The parties shall consult with each other to fully integrate each other's contributions into flood hazard identification efforts. Questions regarding the execution of the agreement will be resolved by an implementation committee consisting of a FEMA representative and a representative of {Insert name(s) of community and/or partner(s)}. In States where statutory and/or regulatory requirements require the State's review and/or approval of new flood hazard data, a State representative will also serve on the implementation committee, as appropriate.

2. Evaluation and Reporting

The parties shall annually review the partnership created by the agreement to determine and document the activities undertaken to maintain accurate flood hazard data, and to revise the agreement as necessary.

3. Resource Commitment

The parties agree to commit the appropriate human and available financial resources sufficient to coordinate effectively with all entities impacted by flood hazard identification efforts to implement this agreement.

4. Standards

Unless otherwise indicated, all flood hazard identification activities will be accomplished according to FEMA's Flood Insurance Study Guidelines and Specifications for Study Contractors (FEMA 37), dated 1/95, and FEMA's Guidelines and Specifications for Flood Map Production Coordination Contractors, dated 2/99, and all subsequent revisions to these documents.

5. Term

The respective duties, responsibilities, and commitments of the parties in this agreement shall begin on the date this agreement is signed by the parties and may be periodically renewed, revised, or terminated at the option of any of the parties. The parties agree that a 60-day notice shall be given prior to the termination of this agreement.

THEREFORE, each party has caused this agreement to be executed by its duly authorized representatives on the date this agreement is signed.

_____	_____
Community Authorized Representative	date
_____	_____
FEMA Authorized Representative	date
_____	_____
State Representative	date

(Note that in States where statutory and/or regulatory requirements require the State's review and/or approval of new flood hazard data, the State will be a signatory to a community's agreement.)

I.3 Post-Scoping Meeting Activities

The templates, checklists, and forms that the FEMA Lead and other Project Team members shall use to record activities after the Project Scoping Meeting are summarized in Subsections I.3.1, I.3.2, and I.3.3.

I.3.1 Statement of Work Template

FEMA designed the Statement of Work Template to assist the FEMA Lead in documenting the Statement of Work for the Flood Map Project. The FEMA Lead shall prepare one Statement of Work for the entire Flood Map Project with the responsible Project Team member assigned to complete each Project task clearly identified.

Statement of Work

{Insert Name of Project}

{Insert Case Number}

{Insert Date}

Introduction

The purpose of this mapping project is to develop {new/updated} Flood Insurance Rate Maps (FIRMs) and Flood Insurance Study (FIS) for {insert name of community(ies) or county}. The FIS and FIRMs will be produced in {countywide or community-based} digital FIRM (DFIRM) format.

<Delete this text and the table below if the project includes only conversion of maps to DFIRM>Additionally, this project will include developing new and/or updated flood data, as summarized in the following table:

Flooding Source	Reach Limits	Hydrology	Hydraulics	Floodplain Mapping	Redelin-eation of SFHAs Using Effective Profiles	Refine/ Establish Zone As
{Insert name of flooding source}	{Insert reach limits}	{Check if applicable}	{Check if applicable}	{Check if applicable}	{Check if applicable}	{Check if applicable}

This project will be completed by {insert names of Mapping Partner that will participate in this project}. The tasks, and who they will be completed by, are described in the Scope of Work below.

Scope of Work

The following sections describe the specific tasks associated with this mapping project. Each task description identifies the responsible entity, the applicable standards, and resultant deliverables.

<Include only those tasks listed below that apply to this mapping project>

<If any of the tasks are assigned to more than one project team member, copy the applicable subsection and renumber it using subletters (e.g., hydraulic analysis of different flooding sources can be divided and designated as Task 6a and Task 6b).>

Tasks	Mapping Partner	Mapping PartnerC	Mapping Partner
Task 1 – Field Surveys and Reconnaissance			
Task 2 – Topographic Data Development			
Task 3 – Independent QA/QC of Topographic Data			
Task 4 –Hydrology			
Task 5–Independent QA/QC of Hydrology			
Task 6 – Hydraulics			
Task 7 – Independent QA/QC of Hydraulics			
Task 8 – Floodplain Mapping (Revised Areas)			
Task 9 – Independent QA/QC of Floodplain Mapping			
Task 10 – Base Map Acquisition			
Task 11 – DFIRM Production (Non-Revised Areas)			
Task 12 – Merge Effective and Revised Information			
Task 13 – Issue Preliminary FIS and FIRM			
Task 14 – Post-Preliminary Processing			
Task 15 – Reporting			

Task 1 - Field Surveys and Reconnaissance

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: To supplement any field reconnaissance conducted during the scoping phase of this project, {insert responsible party} shall conduct a detailed field reconnaissance of the specific study area to determine conditions along the floodplain(s), types and numbers of hydraulic and/or flood control structures, apparent maintenance or lack thereof of existing hydraulic structures, locations of cross sections to be surveyed, and other parameters needed for the hydrologic and hydraulic analyses.

In addition to the initial field reconnaissance, this task includes conducting field surveys, including obtaining channel and floodplain cross-sections, identifying or establishing elevation reference marks (ERMs), and obtaining the physical dimensions of hydraulic and flood control structures. {Insert responsible party} is responsible for coordinating with other team members collecting topographic data under Task 2.

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead:

<Add, modify or delete deliverables below, as necessary>

- A report summarizing the findings of the field reconnaissance.
- Maps and drawings that provide the detailed survey results.
- Survey note book containing cross sections and structural data.

Task 2 - Topographic Data Development

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: To supplement the field surveys conducted under Task 1, additional topographic data of the overbank areas of flooding sources will be obtained to delineate floodplain boundaries. Specifically, new topographic data will be generated for {insert flooding souce(s)} using {Insert method for collecting additional topopgrahic data}. {Insert responsible party} is responsible for coordinating with other team members conducting field surveys under Task 1.

<Optional paragraph if automated H&H is used>This task also consists of developing topographic maps and/or Digital Elevation Models (DEMs) for the subject flooding sources using the data collected in Task 1 and 2. In addition, {insert responsible party} will be responsible for addressing all concerns or questions regarding this Task raised during the QA/QC review (Task 3).

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: Upon completion of topographic data collection and processing for {insert flooding sources}, this data will be submitted to {insert name of party responsible for QA/QC review of the topographic data} for independent review under Task 3. Data for the remaining flooding sources will be submitted for QA/QC review at the completion of this task.

In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- Hardcopy topographic maps.
- Completed Form No. 5 of *Revisions to National Flood Insurance Program Maps, Application/Certification Forms and Instructions* (MT-2).
- Report summarizing methodology and results.
- Triangular Irregular Network (TIN) data on CD-ROM.
- Checkpoint analyses to assess the accuracy of TIN data including Root Mean Square Error (RMSE) calculations to support vertical accuracy.
- Identification of remote sensing data voids and methods used to supplement data voids.
- NGS data sheets for Network Control Points (NCP) used to control remote sensing and ground surveys.

Task 3 - Independent QA/QC of Topographic Data

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: {Insert responsible party} shall review the mapping data generated by {Insert party responsible for conducting the topographic information} under Task 2 of this Statement of Work to ensure that this information is consistent with FEMA standards and standard engineering practice and are sufficient to revise the FIRM.

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- A Summary Report that describes the findings of the QA/QC review.
- Recommendations to resolve any problems that arise as a result of the QA/QC review.

Task 4 - Hydrology

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: Hydrologic analyses will be completed for approximately {insert number of square miles} square miles of drainage area for the flooding source(s) listed in the Introduction of this Statement of Work. The hydrologic methods used for this analysis will be {insert the hydrologic methods to be used. Include a table if multiple methods are used}. Peak flood discharges will be calculated for the {specify recurrence intervals} annual chance storms. These flood discharges will be the basis for subsequent hydraulic analyses of the subject flooding sources. In addition, {insert responsible party} will be responsible for addressing all concerns or questions regarding this Task raised during the QA/QC review (Task 5).

<Optional paragraph for GIS-based modeling> If GIS-based modeling is used, automated data processing and modeling algorithms will be documented and provided to FEMA to ensure they are consistent with the standards outlined above. Digital data sets (such as elevation, basin, or land use data) will be documented and provided to FEMA for approval prior to performing the analyses to ensure they meet minimum requirements. If non-commercial (i.e., custom-developed) software is used for the analysis, then full user documentation, technical algorithm documentation, and the software will be provided to FEMA for review prior to performing the scope of work.

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: Upon completion of hydrologic modeling for {Insert flooding sources; specifiy a subset of all flooding sources being analyzed}, the results will be submitted to {insert name of party responsible for QA/QC review of the hydrologic modeling} for independent review under Task 5. The results for the remaining flooding sources will be submitted for QA/QC review at the completion of this task.

In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- Digital copies of all hydrologic modeling (input and output) files for {specify recurrence intervals}.
- "Summary of Discharge" table(s) for each subject flooding source.
- Appropriate Mapping Partner application/certification form for hydrology.
- All back-up data used in the analysis.
- <Optional for GIS-based modeling> For GIS-based modeling, deliverables include all input and output data, intermediate data processing products, and GIS data layers.

Task 5 - Independent QA/QC of Hydrology

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: {Insert responsible party} shall review the technical, scientific, and other information submitted by {Insert party responsible for conducting the hydrologic analysis} under Task 4 of this Statement of Work to ensure that the data and modeling are consistent with FEMA standards and standard engineering practice and are sufficient to revise the FIRM. This work will include, at a minimum, the following:

<Delete or add tasks below, as necessary>

- Review submittal for technical and regulatory adequacy, required information, application/certification forms, and supporting data and documentation. The technical review will focus on:
  - Use of acceptable models.
  - Use of appropriate methodology(ies) for area of study or restudy.
  - Correctly applied methodology(ies)/model(s), including Quality Control of input parameters.
  - Comparison with gage data and/or regression equations, if appropriate.
  - Comparison with discharges for contiguous reaches or flooding sources.
- Maintain records of all contacts, reviews, recommendations, and actions and make them readily available to FEMA.
- Maintain an archive of all data submitted for hydrologic modeling review.

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- A Summary Report that describes the findings of the QA/QC review.
- Recommendations to resolve any problems that arise as a result of the QA/QC review.

Task 6 - Hydraulics

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: Hydraulic analyses will be completed for approximately {insert number of miles} miles of the flooding sources listed in the Introduction of this Statement of Work. The modeling will include the {insert recurrence intervals} annual chance events based on peak discharges computed under Task 4. The hydraulic methods used for this analysis will include {insert the hydraulic methods to be used. Include a table if multiple methods are used.}. Cross Section and field data collected under Task 1 will be used to prepare the hydraulic analyses. The hydraulic analyses will be used to establish flood elevations and floodways for the subject flooding sources. In addition, {insert responsible party} will be responsible for addressing all concerns or questions regarding this Task raised during the QA/QC review (Task 7).

<Optional paragraph for GIS-based modeling> Automated data processing and modeling algorithms for GIS-based modeling will be documented and provided to FEMA to ensure they are consistent with the standards outlined above. Digital data sets will be documented and provided to FEMA for approval prior to performing the analyses to ensure they meet minimum requirements. If non-commercial (i.e., custom-developed) software is used for the analysis, then full user documentation, technical algorithm documentation, and the software will be provided to FEMA for review prior to performing the scope of work.

<Add additional details regarding the scope, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: Upon completion of hydraulic modeling for {Insert flooding sources; specifiy a subset of all flooding sources being analyzed.}, the results will be submitted to {insert name of party responsible for QA/QC review of the hydraulic modeling} for independent review under Task 7. The results for the remaining flooding sources will be submitted for QA/QC review at the completion of this task.

In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- Digital profiles of the 10%, 2%, 1% and 0.2% annual chance water-surface elevations representing existing conditions.
- Floodway Data Table(s) for each subject flooding source.
- Digital copies of all hydraulic modeling (input and output) files.
- All back-up data used in the analysis.
- <Optional for GIS-based modeling> For GIS-based modeling, deliverables include all input and output data, intermediate data processing products, GIS data layers, and final products in the format of the DFIRM database structure.

Task 7 - Independent QA/QC of Hydraulics

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: {Insert responsible party} shall review the technical, scientific, and other information submitted by {insert party responsible for conducting the hydraulic analysis} under Task 6 of this Statement of Work to ensure that the data and modeling are consistent with FEMA standards and standard engineering practice and are sufficient to revise the FIRM. This work will include, at a minimum, the following:

<Delete or add tasks below, as necessary>

- Review submittal for technical and regulatory adequacy, required information, application/certification forms, and supporting data and documentation. The technical review will focus on:
    - Use of acceptable models.
    - Starting water-surface elevations.
    - Cross section geometry.
    - Manning's "n" values and expansion/contraction coefficients.
    - Bridge and culvert modeling.
    - Discharges.
    - Floodway methods.
    - Tie-in to upstream and downstream non-revised profiles.
- When the HEC-2 or HEC-RAS model is used, the reviewer will utilize the CHECK-2 or CHECK-RAS programs to flag potential problems and focus review efforts.
- Maintain records of all contacts, reviews, recommendations, and actions and make them readily available to FEMA.
- Maintain an archive of all data submitted for hydraulic modeling review.

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- A Summary Report that describes the findings of the QA/QC review.
- Recommendations to resolve any problems that arise as a result of the QA/QC review.

Task 8 - Floodplain Mapping (Revised Areas)

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: Digital floodplain and floodway boundaries will be delineated for the flooding sources listed in the Introduction of this Statement of Work. The mapping will incorporate all revised hydraulic modeling and newly acquired topographic information. The floodplain boundaries for the {insert recurrence intervals} recurrence intervals and a floodway will be delineated on a digital work map based on topographic data developed under Task 2 of this SOW, which will be the basis of the revised FIRM. In addition, {insert responsible party} will be responsible for addressing all concerns or questions regarding this Task raised during the QA/QC review (Task 9).

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: Upon completion of floodplain mapping for {Insert flooding sources; specify a subset of all flooding sources being remapped}, the results will be submitted to {insert name of party responsible for QA/QC review of the hydrologic modeling} for independent review under Task 9. The mapping for the remaining flooding sources will be submitted for QA/QC review at the completion of this task.

In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- Digital work maps with the 1% and 0.2% annual chance floodplain and floodway boundaries delineated. These maps should also include cross sections, BFEs, and zone designation labels.
- <For Coastal Areas—delete if not for coastal area>Digital work map with the Coastal High Hazard Area (V Zone) delineated along {Indicate either Atlantic Ocean, Gulf of Mexico, Great Lakes, Pacific Ocean, or other.} shorelines. These maps should include transect locations, BFEs, and zone designation labels.
- Any back-up or supplemental information used in the mapping required for the QA/QC review (Task 9).

Task 9 - Independent QA/QC of Floodplain Mapping

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: {Insert responsible party} shall review the floodplain work maps submitted by {Insert party responsible for conducting the floodplain mapping} under Task 8 of this Statement of Work to ensure that the results of the hydraulic analyses are accurately represented on the work maps. This work will include, at a minimum, the following:

<Add, modify or delete tasks below, as necessary>

- Cross sections were properly located and oriented on the work map and agree with the Floodway Data Table.
- The Base Flood Elevations (BFEs) shown on the work map are properly located and agree with the results of the hydraulic modeling.
- The floodway widths agree with the widths shown in the Floodway Data Table(s) and the results of the hydraulic modeling.
- The floodplain boundaries agree with the flood elevations shown in the Floodway Data Table(s) and the contour lines and other topographic information shown on the work maps.
- For coastal studies, setup and runup height elevations shown on the work map agree with those shown on the data table(s), and stillwater elevations are shown where coastal and riverine flooding studied in detail join.
- Zone designations are indicated properly.

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- A Summary Report that describes the findings of the QA/QC review noting any deficiencies and providing recommendations to resolve them or agreeing with the mapping results.
- Recommendations to resolve any problems that arise as a result of the QA/QC review.
- An annotated work map with all questions and/or concerns indicated will be provided, if necessary.

Task 10 - Base Map Acquisition

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: This task consists of obtaining the digital base map {specify which one} for the project, and includes the following activities:

<Add, modify or delete tasks below, as necessary>

- Obtain digital files (raster or vector) of the base map.
- Secure necessary permissions from the map source to allow FEMA's use and distribution of hardcopy and digital map products using the digital base map, free of charge.
- Certify that the digital data meets the minimum standards and specifications that FEMA requires for DFIRM production.
- Populate the DFIRM database with the information required by FEMA.

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- Written certification that the digital data meet the minimum standards and specifications.
- Documentation that the digital base map can be used by FEMA.

Task 11 - DFIRM Production (Non-Revised Areas)

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: For all flooding sources except those specified in the Introduction to the Statement of Work (that will have updated flood data developed under Tasks 1 – 9), the effective FIRMs and Flood Boundary Floodway Maps (FBHMs) will be converted to digital format that conforms with FEMA's Digital FIRM (DFIRM) specifications. The base map acquired under Task 10 will be used for the conversion. The scope of this task covers the digitization of {insert number of panels} FIRM panels and {insert number of panels} FHBMs panels. Letters of Map Change (LOMCs) issued since the current effective FIRM for each affected community will also be incorporated. The digital flood theme for the flooding sources specified in the Introduction will not be digitized as part of this Task; rather, {insert name of responsbile party} will leave these as "holes" in the digital flood theme that will be filled in as part of Task 12 using digital flood data from Task 8.

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- DFIRM mapping files in one of the GIS file formats specified in FEMA's Digital Flood Insurance Rate Map (DFIRM) Specifications. These files should be provided on CD-ROM.
- DFIRM database files in one of the database formats specified in FEMA's Digital Flood Insurance Rate Map (DFIRM) Specifications. These files should also be provided on CD-ROM.
- Metadata files describing the DFIRM data should be provided. These files will include the required information and follow the examples shown in FEMA's Digital Flood Insurance Rate Map (DFIRM) Specifications.
- A complete set of plots of the DFIRM panels showing all detail at the scale(s) agreed upon in the "Scope of Project" will be provided.
- A Quality Assurance/Quality Control (QA/QC) report that includes a description and the results of all automated or manual quality assurance steps taken during the preparation of the DFIRMs will be provided.

Task 12 - Merge Effective and Revised Information

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: Upon completion of the Floodplain Mapping Task (Task 8) for the revised flooding sources and the Digital FIRM Production (Task 11) for non-revised flooding sources, the digital floodplain data will be merged into a single, updated Digital FIRM. This work will include tying in flood profiles, floodplain boundaries and floodways with contiguous communities that were not studied as part of this project. {Insert name of responsible party} will be responsible for coordinating with those conducting Tasks 8 and 11, as necessary, to resolve any potential tie-in issues.

<Add additional details regarding the scope of this task, as appropriate>

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- DFIRM mapping files in one of the GIS file formats specified in FEMA's Digital Flood Insurance Rate Map (DFIRM) Specifications. These files should be provided on CD-ROM.
- DFIRM database files in one of the database formats specified in FEMA's Digital Flood Insurance Rate Map (DFIRM) Specifications. These files should also be provided on CD-ROM.
- Metadata files describing the DFIRM data should be provided. These files will include the required information and follow the examples shown in FEMA's Digital Flood Insurance Rate Map (DFIRM) Specifications.
- A complete set of plots of the DFIRM panels showing all detail at the scale(s) agreed upon in the "Scope of Project" will be provided.
- A Quality Assurance/Quality Control (QA/QC) report that includes a description and the results of all automated or manual quality assurance steps taken during the preparation of the DFIRMs will be provided.

Task 13 - Issue Preliminary FIS and FIRM

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: This task consists of the final preparation, review and distribution of the preliminary FIRM and associated FIS report for community and public review and comment. The activities to be performed include:

<Add, modify or delete tasks below, as necessary>

- *FIS Report Preparation:* Unless instructed otherwise by FEMA, the revised FIS report will be prepared in the format of the existing FIS report. It will be revised to reflect current conditions, and include updated data tables and flood profiles. At a minimum, it will include the following: text; cover; vicinity map; tables; photographs (if available); profiles; floodway schematic; and, when necessary, transect schematic and transect location map.

- *Quality Assurance/Quality Control:* A final QA/QC review of the preliminary FIRMs and FIS report, including all data tables, flood profiles, and other components of the FIS, as appropriate, and the news release will be conducted. The QA/QC procedures will be consistent with the *Guidelines and Specifications for Flood Map Production Coordination Contractors (Final Draft)* referenced in the "Standards" subsection below.

- *Discrepancy Resolution:* The party conducting this task will be responsible for working with the party(ies) performing the other tasks of this project to resolve discrepancies identified during QA/QC.

- *Distribution of Preliminary FIRM and FIS:* The Preliminary FIS and FIRMs will be distributed to the affected communities, State agencies, and others as appropriate.

- *News Release Preparation:* News release notifications of BFE changes will be prepared and submitted for QA/QC review (discussed below) prior to being published. The news release will summarize newly proposed BFEs, modifications to existing BFEs, and any changes to the community's floodplain management ordinances to be NFIP compliant. Upon completion of a 30-day community comment period and/or final meeting with the community, and upon initiation of the 90-day appeal period, the {insert name of responsible party} will arrange for and verify that the news release is published in prominent newspapers with local circulation within each affected community.

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable Standards" section of this SOW.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- {Insert number of sets to be printed} sets of printed preliminary DFIRMs and revised FIS reports, including all updated data tables and flood profiles mailed to the CEO of each community, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by the FEMA Lead.
- Preliminary transmittal letter.
- Revised DFIRM mapping files in one of the database formats specified in FEMA's Digital Flood Insurance Rate Map (DFIRM) Specifications. These files should also be provided on CD-ROM.
- Revised DFIRM database files in one of the database formats specified in FEMA's Digital Flood Insurance Rate Map (DFIRM) Specifications. These files should also be provided on CD-ROM.
- Revised metadata files describing the DFIRM data should be provided. These files will include the required information and follow the examples shown in FEMA's Digital Flood Insurance Rate Map (DFIRM) Specifications.
- A Quality Assurance/Quality Control (QA/QC) report that includes a description and the results of all automated or manual quality assurance steps taken during the preparation of the preliminary DFIRMs will be provided.
- Document that the news release(s) was published in accordance with FEMA requirements.

Task 14 - Post-Preliminary Processing

Responsible Entity: {Insert name of Mapping Partner responsible for this task}

Scope: This task consists of finalizing the FIRMs and FIS report after the preliminary FIS and FIRM have been issued for public review and comment. The activities to be performed include:

<Add, modify or delete tasks below, as necessary>

- *Resolving Appeals and Protests:* Appeals and protests received during the 90-day appeal period will be reviewed and resolved prior to finalizing the FIRMs and FIS report. For each appeal and protest, the following activities will be conducted: initial processing of the submission, technical review of the appeal/protest, preparation of additional data requests, performing revised analyses, and preparing a proposed resolution for FEMA's review. {Insert name of the responsible party} will mail all associated correspondence upon authorization by FEMA.

- *Special Correspondence:* Comments not received within the 90-day appeal period (referred to as "special correspondence") will be reviewed, and responses will be drafted for FEMA's review. {Insert name of the responsible party} will also mail the final correspondence upon authorization by FEMA.

- *Revise FIRMs and FIS Report:* If necessary, the party responsible for this task will work with those parties responsible for preparing the DFIRM under Tasks 8, 11, and 12 to prepare a Revised Preliminary FIRMs and FIS report, including all data tables and flood profiles.

- *Letter of Final Determination:* The party responsible for this task will work with FEMA to establish an effective date for the FIRMs and FIS report, and will prepare a draft Letter of Final Determination (LFD) for FEMA's review.

- *GPO Processing:* Final copies of the FIRMs and FIS report will be prepared and provided to FEMA. This will include camera-ready film negatives of the FIRMs and paper copies of the FIS reports and profiles. In addition, the appropriate paperwork will be prepared and included with the FIRMs and FIS report, including the Transmittal Letter to the Community CEO, the Print Processing Worksheet, the Printing Requisition Form, and the Community Map Action Form.

- *Archiving Data:* The engineering back-up data and correspondence will be packaged and transmitted to the Engineering Study Data Package facility.

Standards: All work conducted under this task shall conform to the standards specified for this task in the "Applicable standards" section of this SOW.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in Task 15, {Insert responsible party} shall make the following products available to the FEMA Lead.

<Add, modify or delete deliverables below, as necessary>

- Draft LFD and associated back-up data and information for FEMA review.
- Draft Special Correspondence and back-up data and information for FEMA review.
- Appeal and Protest resolution letters, and all back-up data and information for FEMA review.
- {Insert number of sets to be printed} sets of DFIRM negatives and printed FIS reports, including all updated data tables and flood profiles.
- Complete, organized Engineering Study Data Packages.

Task 15 - Reporting

The Project Team members for this project that have responsibilities for tasks included in this Statement of Work shall comply with the following reporting requirements:

- All supporting documentation for the tasks in this Statement of Work shall be submitted in accordance with the *Guide for Preparing Technical Support Data Notebook*, prepared by FEMA, dated May 1989, Revised January 1990. The following table indicates which sections of the guidance document apply to which Task.

TSDN—Applicable Sections

Section of TSDN Guidance Document	Tasks													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
General Documentation														
Special Problem Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Contract (Telephone Conversation) Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Meeting Minutes/Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X
General Correspondence	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Engineering Analyses														
Hydrologic Analyses	X	X		X	X									
Hydraulic Analyses	X	X				X	X							
Key to Cross-section Labeling	X	X				X	X	X	X					

TSDN—Applicable Sections

Section of TSDN Guidance Document	Tasks													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Key to Transect Labeling	X	X				X	X	X	X					
Draft FIS Report Text				X		X							X	X
Mapping Information		X						X	X	X	X	X	X	X
Miscellaneous Reference Materials	X	X	X	X	X	X	X	X	X	X	X	X	X	X

- If any issues arise that could affect the completion of a Task within the proposed scope or budget, the party responsible for that Task must complete a Special Problem Report (SPR) as soon as possible after the issue is identified and submit it to the FEMA Lead. The SPR should describe the issue and propose possible resolutions.

- <Add reporting requirements, as appropriate>

Additionally, {Insert responsible party} will be responsible for collecting and maintaining a set of deliverables for all tasks and shall compile a comprehensive TSDN for the entire project.

Applicable Standards

The following table indicates the relevant standards and documentation that apply to each task described under the Scope of Work.

Applicable Standards Per Assigned Tasks

Applicable Standards	Tasks														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Flood Insurance Study Guidelines and Specification for Mapping Partners (FEMA 37), January 1995, including addendum, "Certification Forms and Instructions for Mapping Partners," April 1993	X	X	X	X	X	X	X	X							
American Congress on Surveying and Mapping (ACSM) procedures	X		X												
Global Positioning System (GPS) Surveys: National Geodetic Survey (NGS-58), "Guidelines for Establishing GPS-Derived Ellipsoid Heights," November 1997	X	X	X												
EM 1000-1-1000, "Photogrammetric Mapping," March 31, 1993	X	X	X												
EM 1110-2-1003, "Hydrographc Surveys," October 31, 1994	X		X												
Flood Insurance Study Guidelines and Specifications for Mapping Partners (FEMA 37), Appendix 4B, Airborne Light Detection and Ranging Systems		X	X												

Applicable Standards Per Assigned Tasks

Applicable Standards	Tasks														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Numerical Models Accepted by FEMA for NFIP Usage, December 8, 1999				X		X									
Guidelines and Specifications for Flood Map Production Coordination Contractors (Final Draft), February 17, 1999					X		X		X	X	X	X	X	X	
Procedures for (Interim) Hydrology Reviews (Draft)					X	X									
Base Map Standards for New Digital Flood Insurance Rate Map Product (Draft, February 19, 1999)										X					
Content Standards for Digital Geospatial Metadata (Federal Geographic Data Committee, 1998)										X	X	X		X	
Digital Flood Insurance Rate Map (DFIRM) Specification											X	X		X	
Document Control Procedures Manual dated October 1993.													X	X	
Guidance for Preparing Technical Support Data Notebook, prepared by FEMA, dated May 1989, Revised January 1990															X

Project Coordination

Throughout the project, all members of the Project Team will coordinate, as necessary, to ensure the products meet the technical and format specifications required and contain accurate, up-to-date information. Coordination activities will include:

<Add/delete/modify coordination activities, as necessary>

- Meetings and teleconferences with FEMA and other project team members {specify frequency or dates for meetings}.
- Telephone conversations with FEMA and other project team members on a scheduled basis {specify schedule for calls} and an ad hoc basis, as required.
- E-mail and letters, as required.

Post-Submission Requirements

Each member of the Project Team is responsible for assisting in the resolution of issues and questions raised prior to the FIRMs being issued as effective.

{Specify any post-submission requirements for each Project Team member.}

I.3.2 Time and Cost Estimates Template

FEMA designed the Time and Cost Estimates Template for Project Team members to use in preparing time and cost estimates for the Flood Map Project. Each non-FEMA Project Team member shall develop a time and cost estimate for assigned tasks. As part of the time and cost estimate, Project Team members also shall establish a schedule for the assigned portion of the work within the schedule agreed upon at the Scoping Meeting.

Note that this form contains proprietary/privileged information and should be made available only to the FEMA Lead and/or FEMA Project Officer. Each member of the Project Management Team completes pertinent sections of the form for tasks assigned in the Project SOW and submits it to the FEMA Lead.

<table>
<tr><td colspan="2">1. Project Team Member:</td><td colspan="2">2. Community and/or County:</td></tr>
<tr><td>3. State:</td><td>4. Study Type:</td><td>5. Proposed Starting Date:</td><td>6. Completion Date:</td></tr>
<tr><td colspan="4">PLANNED WORK
PART I – DETAIL STUDY</td></tr>
<tr><td>7. Length of Stream(s):</td><td>8. Length of Coastline:</td><td>9. Community Area:</td><td>10. No. of Hydraulic Structures:</td></tr>
<tr><td colspan="2">11. No. of Valley Cross Sections:
Existing:_____ New:_____
Average Cost (New) $:_____</td><td colspan="2">12. Source(s):
Existing:_____
_____
_____</td></tr>
<tr><td colspan="4">PART II – APPROXIMATE STUDY</td></tr>
<tr><td>13. Length of Stream(s):</td><td colspan="3">14. Cost per Stream Mile $: _____
Estimated Cost $: _____</td></tr>
<tr><td colspan="4">PART III – MAPPING INFORMATION</td></tr>
<tr><td>15. No. of Revised Map Panels:_____</td><td>16. No. of Converted Map Panels:_____</td><td colspan="2">17. Base Map Source(s):_____
_____
_____</td></tr>
</table>

PART IV – SUMMARY OF COST ESTIMATE			
A. Labor Category (Fill in only for Assigned Tasks and mark others as "N/A.")	**Hourly Rate**	**Hours**	**Dollar Amount**
Task 1 – Field Surveys and Reconnaissance			
Task 2 – Topographic Data Development			
Task 3 – Independent QA/QC of Topographic Data			
Task 4 – Hydrology			
Task 5 – Independent QA/QC of Hydrology			
Task 6 – Hydraulics			
Task 7 – Independent QA/QC of Hydraulics			
Task 8 – Floodplain Mapping (Revised Areas)			
Task 9 – Independent QA/QC of Floodplain Mapping			
Task 10 – Base Map Acquisition			
Task 11 – DFIRM Production (Non-Revised Areas			
Task 12 – Merge Effective and Revised Information			
Task 13 – Issue Preliminary FIS and FIRM			
Task 14 – Post-Preliminary Processing			
Task 15 – Reporting			

B. Burden			
Total Direct Labor Cost $	**_____**	**x Rate _____ =**	**$ _____**
C. Direct Material (Show Basis of Estimate)			**$ _____**
D. Travel **MILEAGE** **Miles _____ x Rate $ _____ = $ _____** **No. of Trips _____** **PER DIEM** **No. of Days _____ x Rate $ _____ = $ _____**			
E. Subcontractors (Separate cost basis justification for each attached)			**$ _____**
F. Other Direct Cost (Basis for estimate attached)			**$ _____**
G. General Administrative Cost			
Total Direct Labor Cost	**$ _____**	**x Rate _____ =**	**$ _____**
H. Fee (Where applicable)			**$ _____**
TOTAL ESTIMATED COSTS			**$ _____**
Remarks:			

PART V – PROJECT SCHEDULE (Fill in only for Assigned Tasks, Mark Others as "N/A.")			
Task Number	**Name**	**Start Date**	**End Date**
1	Field Surveys and Reconnaissance		
2	Topographic Data Development		
3	Independent QA/QC of Topographic Data		
4	Hydrology		
5	Independent QA/QC of Hydrology		
6	Hydraulics		
7	Independent QA/QC of Hydraulics		
8	Floodplain Mapping (Revised Areas)		
9	Independent QA/QC of Floodplain Mapping		
10	Base Map Acquisition		
11	DFIRM Production (Non-Revised Areas)		
12	Merge Effective and Revised Information		
13	Issue Preliminary FIS and FIRM		
14	Post-Preliminary Processing		
15	Reporting		

Name of Person Preparing Estimate	**Title and Phone Number**	**Date**

I.3.3 Notice to Proceed Letter Template

The FEMA Assistance Officer or Contracting Officer shall use the Notice to Proceed Letter Template to prepare the Notice to Proceed letter. The Notice to Proceed Letter distributes the final Scope of Work and Mapping Activity Statement to the Project Team members and notifies them to proceed accordingly.

Federal Emergency Management Agency
{Insert Address of FEMA Office}

{Date}

{Name}
{Address2}
{Address3}
{Address4}
{Address5}

{Flood Mapping Project Title}
{Community(ies)}

{Salutation}:

With this letter, you are authorized to begin your portion of the work necessary to complete the {Insert Flood Mapping Project Title} for the above-referenced community(ies).

Enclosed is a final copy of the Project Management Plan for the project, which provides details on your portion of the work including the Statement of Work, Time- and Cost-Estimate, project time schedules, and project deliverables.

We look forward to working with your <choose one {Firm/Agency/Community--For CTPs} and the community officials of {Insert Name of Community}, as well as other {Insert Name of State} communities, to ensure that the goals of this Flood Mapping Project are met. This will allow {Insert Name of Community} to administer a more effective floodplain management program.

Sincerely,

{Insert Name of Contracting Officer and/or FEMA Lead}

{Insert Title}

cc: {FEMA HQ Engineer}, FEMA Headquarters

{Insert Other Project Team Members, as necessary}

Enclosure